

REMARKS

Claims 9-34 were rejected under 35 USC §102(b) as being anticipated by EP 0303438 ('438). This rejection is respectfully traversed. For a prior art reference to anticipate a set of claims, each and every limitation of the claims must be disclosed in that reference. *Glaxo v. Novopharm*, 34 USPQ2d 1565 (Fed. Cir. 1995). The '438 reference discloses that "the monolithic substrate can be coated with any of the metals or metal oxides known to have activity as oxidation catalysts." (col. 7, lines 11-13). It does not disclose a specific arrangement comprising a first layer which is, during normal operation, located at an upstream end of the fixed arrangement and comprises as a catalytically active metal or precursor thereof rhodium or a rhodium compound, and; a second layer adjacent to the first layer with substantially no gap between the first and second layer, which is, during normal operation, located downstream of the first layer, the second layer comprising as a catalytically active metal or precursor thereof iridium, osmium or platinum or a compound thereof. Therefore, Applicants do not believe that each and every limitation of the rejected claims has been disclosed in the reference and respectfully request that the rejection be withdrawn.

Claims 9-34 were rejected in the alternative under 35 USC §103(a) as being unpatentable over the '438 reference. This rejection is respectfully traversed.

To establish a *prima facie* basis for obviousness, three criteria must be met. First, there must be some suggestion or motivation, either in the reference itself or in the knowledge generally available to one of ordinary skill in the art, to modify the reference. Second, there must be a reasonable expectation of success. Finally, the prior art reference must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination must be found in the prior art, and not based on applicant's disclosure [MPEP § 2142; *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).]

An object of the '438 reference is to utilize non-traditional materials as catalysts for the catalytic partial oxidation reaction and it accomplishes this by requiring a surface area to volume ratio of at least $5 \text{ cm}^2/\text{cm}^3$ (col. 3, lines 57-63, col. 5, lines 15-18 and col. 6, lines 33-45). The reference cites numerous possible catalyst supports, materials, and metals (col. 6, lines 17-65, col. 7 lines 1-59). There is no suggestion or motivation in the reference that would suggest that a particular arrangement of particular components would be beneficial, in fact, the reference

indicates that it "is possible to use a wide variety of materials as a catalyst, provided that the catalyst has the desired surface-area-to-volume ratio." (col. 5, lines 15-18 and col. 5, lines 35-38). As explained on page 4, lines 12 – 23 of the present Application, the present invention results in a catalyst with a slower deactivation rate than a catalyst comprising a combination of catalytically active metals that are alone or combined in a single layer. This is demonstrated in Figure 1. As explained on page 16, lines 19-30 of the present Application, the Y axis shows methane conversion relative to the initial methane conversion, which has been set at 100. The X axis shows hours on stream. It is clear that a catalyst of the invention, as made in Example 3, shows a lower deactivation rate than catalysts which are not of the invention. Any reduction in deactivation rate in this process on a commercial scale is highly significant. In view of the above remarks, Applicants believe a *prima facie* basis for obviousness has not been established, and respectfully request that the rejection be withdrawn.

Claims 9-34 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claim 1-12 of copending Application No. 10/450,602 in view of either the '438 or De Jong *et al* US 5,720,901 ('901). A terminal disclaimer accompanies this Amendment. In view of this, Applicants respectfully request that the rejection be withdrawn.

CONCLUSION

In view of the above amendments and remarks, Applicants believe the instant application to be in condition for allowance and respectfully request that such action be taken.

Respectfully submitted,

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